

# LIST OF CONTENTS

## Volume 19, 2001

VOLUME 19, NUMBER 1

2001

### CONTENTS

#### ● ORIGINAL CONTRIBUTIONS

##### **Neonatal Auditory Activation Detected by Functional Magnetic Resonance Imaging**

Adam W. Anderson, Rene Marois, Eve R. Colson, Bradley S. Peterson, Charles C. Duncan, Richard A. Ehrenkranz, Karen C. Schneider, John C. Gore, and Laura R. Ment

1

##### **Increasing Mean Airway Pressure Reduces Functional MRI (fMRI) Signal in the Primary Visual Cortex**

Ingo H. Lorenz, Christian Kolbitsch, Christoph Hörmann, Michael Schocke, Christian Kremser, Fritz Zschiegner, Stephan Felber, and Arnulf Benzer

7

##### **Assessment of Cerebrovascular Reactivity with Functional Magnetic Resonance Imaging: Comparison of CO<sub>2</sub> and Breath Holding**

Andreas Kastrup, Gunnar Krüger, Tobias Neumann-Haefelin, and Michael E. Moseley

13

##### **Rate Dependence of Human Visual Cortical Response Due to Brief Stimulation: An Event-Related fMRI Study**

Bahadır Ozus, Ho-Ling Liu, Lin Chen, Meenakshi B. Iyer, Peter T. Fox, and Jia-Hong Gao

21

##### **Functional MRI of Motor and Sensory Activation in the Human Spinal Cord**

P.W. Stroman and L.N. Ryner

27

##### **Enhanced Sensitivity to Molecular Diffusion with Intermolecular Double-Quantum Coherences: Implications and Potential Applications**

Jianhui Zhong, Zhong Chen, Edmund Kwok, and Stott Kennedy

33

##### **Recurrent Hepatocellular Carcinoma Versus Radiation-Induced Hepatic Injury: Differential Diagnosis with MR Imaging**

Hiroaki Onaya, Yuji Itai, Tayeb Ahmadi, Hiroshi Yoshioka, Toshiyuki Okumura, Yasuyuki Akine, Hiroshi Tsuji, and Hirohiko Tsujii

41

##### **Early MRI Findings of Rapidly Destructive Coxopathy**

Nobuhiko Sugano, Kenji Ohzono, Takashi Nishii, Takashi Sakai, Keiji Haraguchi, Hideki Yoshikawa, and Toshikazu Kubo

47

|   |     |
|---|-----|
| <b>Classification of Signal-Time Curves from Dynamic MR Mammography by Neural Networks</b><br>Robert E.A. Lucht, Michael V. Knopp, and Gunnar Brix  | 51  |
| <b>Adaptive Data Acquisition in MRI</b><br>Yong Man Ro  | 59  |
| <b>Three-Dimensional Segmentation of Anatomical Structures in MR Images on Large Data Bases</b><br>G. Bueno, O. Musse, F. Heitz, and J.P. Armspach  | 73  |
| <b>Three-Dimensional Magnetic Resonance Spectroscopic Imaging of Histologically Confirmed Brain Tumors</b><br>Daniel Vigneron, Andrew Bollen, Michael McDermott, Lawrence Wald, Mark Day,<br>Susan Moyher-Noworolski, Roland Henry, Susan Chang, Mitchell Berger, William Dillon, and<br>Sarah Nelson | 89  |
| <b>Prospective Evaluation of in vivo Proton MR Spectroscopy in Differentiation of Similar Appearing Intracranial Cystic Lesions</b><br>A. Shukla-Dave, R.K. Gupta, R. Roy, N. Husain, L. Paul, S.K. Venkatesh, M.R. Rashid, D.K. Chhabra,<br>and M. Husain  | 103 |
| <b>RF Coils for Combined MR and Hyperthermia Studies: I. Hyperthermia Applicator as an MR Coil</b><br>Rama Jayasundar, Laurance D. Hall, and Norman M. Bleehen  | 111 |
| <b>RF Coils for Combined MR and Hyperthermia Studies: II. MR Coil as an Hyperthermic Applicator</b><br>Rama Jayasundar, Laurance D. Hall, and Norman M. Bleehen   | 117 |
| ● <i>TECHNICAL NOTE</i>   |     |
| <b>Assessment of Scanner Performance and Normalization of Estimated Relaxation Rate Values</b><br>Andrea Ciarmiello, Arturo Brunetti, Michele Larobina, Mario Quarantelli, Mario Ziviello, Bruno Alfano,<br>and Marco Salvatore   | 123 |
| ● <i>CASE REPORT</i>  |     |
| <b>Gemcitabine-Associated Posterior Reversible Encephalopathy Syndrome: MR Imaging and MR Spectroscopy Findings</b><br>Mai T. Russell, A. Sami Nassif, Edwin D. Cacayorin, Eric Awwad, William Perman, and Frank Dunphy   | 129 |

---

|                     |      |
|---------------------|------|
| VOLUME 19, NUMBER 2 | 2001 |
|---------------------|------|

## CONTENTS

### ● *ORIGINAL CONTRIBUTIONS*

|   |     |
|---|-----|
| <b>MRI Studies of the Neurotoxic Effects of L-2-Chloropropionic Acid on Rat Brain</b><br>R.E. Williams, M. Prior, H.S. Bachelard, J.C. Waterton, D. Checkley, and E.A. Lock   | 133 |
| <b>Magnetic Resonance Prediction of Outcome After Thrombolytic Treatment</b><br>Frank Pillekamp, Matthias Grüne, Gerrit Brinker, Claudia Franke, Ulla Uhlenküken, Mathias Hoehn, and<br>Konstantin-Alexander Hossmann | 143 |

|  |     |
|--|-----|
| <b>Early and Delayed Neuroprotective Effects of FK506 on Experimental Focal Ischemia Quantitatively Assessed by Diffusion-Weighted MRI</b>   |     |
| T. Ebisu, K. Katsuta, A. Fujikawa, I. Aoki, M. Umeda, S. Naruse, and C. Tanaka   | 153 |
| <b>Effects of Different Levels of Hypercapnic Hyperoxia on Tumour <math>R_2^*</math> and Arterial Blood Gases</b>  |     |
| Simon P. Robinson, Loreta M. Rodrigues, Franklyn A. Howe, Marion Stubbs, and John R. Griffiths   | 161 |
| <b>MR Monitoring of Focused Ultrasound Surgery in a Breast Tissue Model in Vivo</b>  |     |
| Christian Bohris, Jürgen W. Jenne, Ralf Rastert, Ioannis Simiontonakis, Gunnar Brix, Julia Spoo, Michal Hlavac, Robert Nemeth, Peter E. Huber, Jürgen Debus                              | 167 |
| <b>Optimization and Validation of a Rapid High-Resolution T1-w 3D FLASH Water Excitation MRI Sequence for the Quantitative Assessment of Articular Cartilage Volume and Thickness</b>    |     |
| C. Glaser, S. Faber, F. Eckstein, H. Fischer, V. Springer, L. Heudorfer, T. Stammberger, K.-H. Englmeier, and M. Reiser  | 177 |
| <b>Bilaminar Pattern of Tibial Condyle Cartilage Layer on the Fat-Suppressed 3D Gradient Echo Images: Artifact or Structural and Biochemical Difference in Composition of Cartilage?</b> |     |
| S. Trattnig, V. Mlynárik, B. Jung, T. Bader, I. Sulzbacher, A. Herneth, R. Gaisch, and S. Puig   | 187 |
| <b>Optimization of Scantiming in Abdominal breathhold Contrast-Enhanced MRA: An Empirical Guideline</b>  |     |
| Willem J. Boeve, Willem J. Sluiter, and Richard L. Kamman  | 193 |
| <b>Breath-hold 3D MR Coronary Angiography With a New Intravascular Contrast Agent (Feruglose)—First Clinical Experiences</b>   |     |
| Joern J.W. Sandstede, Thomas Pabst, Christian Wacker, Frank Wiesmann, Volker Hoffmann, Meinrad Beer, Werner Kenn, Wolfgang Bauer, and Dietbert Hahn                                      | 201 |
| <b>Increased Differentiation of Intracranial White Matter Lesions by Multispectral 3D-Tissue Segmentation: Preliminary Results</b>   |     |
| Feroze B. Mohamed, Simon Vinitski, Carlos F. Gonzalez, Scott H. Faro, Fred A. Lublin, Robert Knobler, and Juan Esteban Gutierrez   | 207 |
| <b>Dielectric Resonances and <math>B_1</math> Field Inhomogeneity in UHFMRI: Computational Analysis and Experimental Findings</b>  |     |
| Tamer S. Ibrahim, Robert Lee, Amir M. Abduljalil, Brian A. Baerlein, and Pierre-Marie L. Robitaille  | 219 |
| <b>Continuous Distribution Analysis of Marrow <math>^1\text{H}</math> Magnetic Resonance Relaxation in Bone</b>  |     |
| P. Fantazzini, C. Garavaglia, and G. Guglielmi   | 227 |
| <b>Efficient Cardiac Diffusion Tensor MRI by Three-Dimensional Reconstruction of Solenoidal Tensor Fields</b>  |     |
| Grant T. Gullberg, Michel Defrise, Vladimir Y. Panin, and Gengsheng L. Zeng  | 233 |
| <b>Measuring Extraocular Muscle Volume Using Dynamic Contours</b>  |     |
| M.J. Firbank, R.M. Harrison, E.D. Williams, and A. Coulthard   | 257 |
| <b>A Segmentation-Based and Partial-Volume-Compensated Method for an Accurate Measurement of Lateral Ventricular Volumes on <math>T_1</math>-Weighted Magnetic Resonances Images</b>     |     |
| Deming Wang and David M. Doddrell  | 267 |
| <b>High-Resolution Spectroscopic Imaging of the Human Skin</b>   |     |
| Jan Weis, Anders Ericsson, Gunnar Åström, Pavol Szomolanyi, and Anders Hemmingsson   | 275 |

|   |     |
|---|-----|
| <b>Effect of Increased Repetition Time TR on Precision of Inversion-Recovery <math>T_1</math> Measurements</b><br>Peter B. Kingsley and W. Gordon Monahan | 279 |
|---|-----|

● **TECHNICAL NOTES**

|   |     |
|---|-----|
| <b>Graphical Display of fMRI Data: Visualizing Multidimensional Space</b><br>R. Baumgartner and R. Somorjai           | 283 |
| <b>Fiberoptic Infrared Radiometer for Real Time in Situ Thermometry Inside an MRI System</b><br>S. Sade and A. Katzir | 287 |

---

|                        |      |
|------------------------|------|
| VOLUME 19, NUMBERS 3/4 | 2001 |
|------------------------|------|

**CONTENTS**

**Special Issue: Proceedings of the Fifth International Meeting on  
Recent Advances in MR Applications to Porous Media**

● **EDITORIAL**

|   |     |
|---|-----|
| <b>The Fifth International Meeting on MR Applications to Porous Media</b><br>G.C. Borgia, P. Fantazzini, J.C. Gore, and J. H. Strange | 291 |
|---|-----|

● **GENERAL INTRODUCTIONS**

|   |     |
|---|-----|
| <b>Magnetic Resonance in Porous Media: An Established Interdisciplinary Discipline</b><br>G.C. Borgia and P. Fantazzini | 293 |
|---|-----|

|  |     |
|--|-----|
| <b>The Relationship of Problems in Biomedical MRI to the Study of Porous Media</b><br>J.C. Gore, A.W. Anderson, M.D. Does, D.F. Gochberg, J.M. Joers, R.P. Kennan, E.C. Parsons, and<br>M. Schachter | 295 |
|--|-----|

● **INVITED LECTURES**

|   |     |
|---|-----|
| <b>Time-Dependent Velocities in Porous Media Dispersive Flow</b><br>P.T. Callaghan and A.A. Khrapitchev | 301 |
|---|-----|

|   |     |
|---|-----|
| <b>"Shining Light" on NMR and MRI in Porous Materials</b><br>A. Pines | 307 |
|---|-----|

|   |     |
|---|-----|
| <b>Characterization of Partially Sintered Ceramic Powder Compacts Using Fluorinated Gas NMR<br/>Imaging</b><br>A. Caprihan, C.F.M. Clewett, D.O. Kuethe, E. Fukushima, and S.J. Glass | 311 |
|---|-----|

|   |     |
|---|-----|
| <b>Characterization of Porous Media Structure by Nonlinear NMR Methods</b><br>S. Capuani, M. Alesiani, F.M. Alessandri, and B. Maraviglia | 319 |
|---|-----|

|   |     |
|---|-----|
| <b>Relationships Between Flow and NMR Relaxation of Fluids in Porous Solids</b><br>M.M. Britton, R.G. Graham, and K.J. Packer | 325 |
|---|-----|

|   |     |
|---|-----|
| <b>Stochastic Effects on Single Phase Fluid Flow in Porous Media</b><br>P. Mansfield and M. Bencsik   | 333 |
| <b>Magnetic Resonance Visualisation of Single- and Two-phase Flow in Porous Media</b><br>A.J. Sederman and L.F. Gladden   | 339 |
| <b>Tortuosity Measurement and the Effects of Finite Pulse Widths on Xenon Gas Diffusion NMR Studies of Porous Media</b><br>R.W. Mair, M.D. Huerlimann, P.N. Sen, L.M. Schwartz, S. Patz, and R.L. Walsworth | 345 |
| <b>Flow, Diffusion, and Thermal Convection in Percolation Clusters: NMR Experiments and Numerical FEM/FVM Simulations</b><br>R. Kimmich, A. Klemm, and M. Weber   | 353 |
| <b>Surface Dynamics of Liquids in Porous Media</b><br>J.-P. Korb  | 363 |
| <b>The Modulation of Coupled Relaxation in Porous Media</b><br>L.A. Davis, G.A. Martínez, T.H. Hassoun, and N.K. Vrubel   | 369 |
| <b>Optimization of Timing in the Carr-Purcell-Meiboom-Gill Sequence</b><br>M.D. Huerlimann  | 375 |
| ● <i>CONTRIBUTED PAPERS</i>   |     |
| <b>Direct Measurement of Porous Media Local Hydrodynamical Permeability Using Gas MRI</b><br>M. Bencsik and C. Ramanathan   | 379 |
| <b>Multi-Gradient Pulse Investigations of Fluid Transport in Porous Media</b><br>S. Stapf and B. Bluemich   | 385 |
| <b>NMR Diffusion of Hyperpolarised <math>^3\text{He}</math> in Aerogel: A Systematic Pressure Study</b><br>G. Guillot, P.-J. Nacher, and G. Tastevin  | 391 |
| <b>An Evaluation of NMR Cryoporometry, Density Measurement and Neutron Scattering Methods of Pore Characterisation</b><br>J.B.W. Webber, J.H. Strange, and J.C. Dore  | 395 |
| <b>Surface Effects and Dipolar Correlations of Confined and Constrained Liquids Investigated by NMR Relaxation Experiments and Computer Simulations</b><br>F. Grinberg and R. Kimmich                       | 401 |
| <b>Characterisation of Crosslinked Elastomeric Materials by <math>^1\text{H}</math> NMR Relaxation Time Distributions</b><br>G.C. Borgia, P. Fantazzini, A. Ferrando, and G. Maddinelli                     | 405 |
| <b>Probing Pores Using Elementary Quantum Mechanics</b><br>S. Ryu   | 411 |
| <b>Pore Sizes and Pore Connectivity in Rocks Using the Effect of Internal Field</b><br>Yi-Q. Song   | 417 |
| <b>SPIRAL-SPRITE: A Rapid Single Point MRI Technique for Application to Porous Media</b><br>P. Szomolanyi, D. Goodyear, B. Balcom, and D. Matheson  | 423 |

|   |     |
|---|-----|
| <b>Study of Molecular Mobility of Fluid in Zeolite NaX</b><br>A.V. Uryadov and V.D. Skirda  | 429 |
| <b>Surface-Induced Order and Diffusion in 5CB Liquid Crystal Confined to Porous Glass</b><br>M. Vilfan, T. Apih, A. Gregorovič, B. Zalar, G. Lahajnar, S. Žumer, G.H. Hinze, R. Boehmer, and G. Althoff   | 433 |
| <b>Magnetic Susceptibility Contrast Induced Field Gradients in Porous Media</b><br>K.-J. Dunn   | 439 |
| <b>NMR <math>T_2</math> Distributions and Two Phase Flow Simulations From X-Ray Micro-Tomography Images of Sandstones</b><br>D. Lu, M. Zhou, J. H. Dunsmuir, and H. Thomann   | 443 |
| <b>NMR Diffusometry of Oil-in-Water Emulsions</b><br>B.P. Hills, H.-R. Tang, P. Manoj, and C. Destruel  | 449 |
| <b>Using NMR Displacement Imaging to Characterize Electroosmotic Flow in Porous Media</b><br>U. Tallarek, T.W.J. Scheenen, P.A. De Jager, and H. Van As   | 453 |
| <b>Electrophoretic NMR Studies of Electrical Transport in Fluid-Filled Porous Systems</b><br>M. Holz, S.R. Heil, and I.A. Schwab  | 457 |
| ● <i>SHORT COMMUNICATIONS</i>   |     |
| <b>Time Domain Analysis: An Alternative Way to Interpret PGSE Experiments</b><br>S. Rodts and P. Levitz   | 465 |
| <b>Low-Frequency Velocity Correlation Spectrum of Fluid in Porous Media by Modulated Gradient Spin Echo</b><br>J. Stepišnik and P.T. Callaghan  | 469 |
| <b>Examples of Marginal Resolution of NMR Relaxation Peaks Using UPEN and Diagnostics</b><br>G.C. Borgia, R.J.S. Brown, P. Fantazzini   | 473 |
| <b>From Porous Media to Trabecular Bone Relaxation Analysis: Spatial Variations of Marrow <math>^1\text{H}</math> Relaxation Time Distributions Detected in Vitro by Quasi-Continuous Distribution Analysis</b><br>P. Fantazzini, C. Garavaglia, and G. Guglielmi | 477 |
| <b>Combined MR-Relaxation and MR-Cryoporometry in the Study of Bone Microstructure</b><br>P. Fantazzini, R. Viola, S.M. Alnaimi, and J.H. Strange   | 481 |
| <b>Short-TE Projection Reconstruction NMR Microscopy of Trabecular Bone</b><br>R. Toffanin, V. Jelluš, P. Szomolanyi, and F. Vittur   | 485 |
| <b>A Novel Application of NMR Microscopy: Measurement of Water Diffusion Inside Bioadhesive Bonds</b><br>P. Marshall, J.E.M. Snaar, Y.L. Ng, R.W. Bowtell, F.C. Hampson, P.W. Dettmar, and C.D. Melia   | 487 |
| <b>Cryoporometry and Relaxometry of Water in Silica-Gels</b><br>R. Valckenborg, L. Pel, and K. Kopinga  | 489 |
| <b>Micropore Size Analysis in Hydrated Cement Paste by NMR</b><br>A. Plassais, M.-P. Pomies, N. Lequeux, P. Boch, and J.-P. Korb  | 493 |



|   |     |
|---|-----|
| <b>The NMR-MOUSE®: Quality Control of Elastomers</b>  |     |
| H. Kuehn, M. Klein, A. Wiesmath, D.E. Demco, B. Bluemich, J. Kelm, and P.W. Gold  | 497 |
| <b>Application of Single Point Imaging (SPI) to Solid State Materials</b>   |     |
| Z. Fang, D. Hoepfel, and K. Winter  | 501 |
| <b>NMR Hand-Held Moisture Sensor</b>  |     |
| P.J. Prado  | 505 |
| <b>Effects of Hydrophobic Treatments of Stone on Pore Water Studied by Continuous Distribution Analysis of NMR Relaxation Times</b>                                   |     |
| L. Appolonia, G.C. Borgia, V. Bortolotti, R.J.S. Brown, P. Fantazzini, and G. Rezzaro   | 509 |
| <b>Performance Evolution of Hydrophobic Treatments for Stone Conservation Investigated by MRI</b>   |     |
| G.C. Borgia, V. Bortolotti, M. Camaiti, F. Cerri, P. Fantazzini, and F. Piacenti  | 513 |
| <b>New Ways of Probing Surface Nuclear Relaxation and Microdynamics of Water and Oil in Porous Media</b>  |     |
| S. Godefroy, J.-P. Korb, M. Fleury, and R.G. Bryant   | 517 |
| <b>MRI Investigation of Hydration and Heterogeneous Degradation of Aliphatic Polyesters Derived From Lactic and Glycolic Acids: A Controlled Drug Delivery Device</b> |     |
| A. Djemai, L.F. Gladden, J. Booth, R.S. Kittlety, and P.R. Gellert  | 521 |
| <b>Diffusion in Thin Films on the Surface of Porous Solid</b>   |     |
| W.M. Holmes, C. De Panfilis, and K.J. Packer  | 525 |
| <b>MRI Velocimetry and Lattice-Boltzmann Simulations of Viscous Flow of a Newtonian Liquid Through a Dual Porosity Fibre Array</b>                                    |     |
| M.D. Mantle, B. Bijeljic, A.J. Sederman, and L.F. Gladden   | 527 |
| <b>NMR Imaging of Mass Transport and Related Phenomena in Porous Catalysts and Sorbents</b>   |     |
| I.V. Koptug, L.Yu. Khitrina, V.N. Parmon, and R.Z. Sagdeev  | 531 |
| <b>Interpretation of Restricted Diffusion in Sandstones with Internal Field Gradients</b>   |     |
| M. Appel, J.J. Freeman, J.S. Gardner, G.H. Hirasaki, Q.G. Zhang, and J.L. Shafer  | 535 |
| <b>Quantification and Description of Fracture Network by MRI Image Analysis</b>   |     |
| M. Balzarini, S. Nicula, D. Mattiello, and E. Aliverti  | 539 |
| <b>NMR Response of Non-Reservoir Fluids in Sandstone and Chalk</b>  |     |
| C. van der Zwaag, F. Stallmach, T. Skjetne, and E. Veliyulin  | 543 |
| <b>NMR Studies of Water Diffusion and Relaxation in Hydrating Slag-Based Construction Materials</b>   |     |
| N. Nestle, P. Galvosas, O. Geier, M. Dakkouri, C. Zimmermann, and J. Kärger   | 547 |
| <b>Ion Transport in Porous Media Studied by NMR</b>   |     |
| L. Pel, H.P. Huinink, K. Kopinga, L.A. Rijniers, and E.F. Kaasschieter  | 549 |
| <b>Investigation of the Microporosity of High Performance Concrete by Proton Nuclear Relaxation</b>   |     |
| C. Porteneuve, J.-P. Korb, D. Petit, and H. Zanni   | 551 |
| <b>Measuring Spatially Resolved Gas Transport and Adsorption in Coal Using MRI</b>  |     |
| C. Ramanathan and M. Bencsik  | 555 |
| <b>STRAFI-NMR Studies of Water Transport in Soil</b>  |     |
| A.R. Preston, N.R.A. Bird, P. Kinches, E.W. Randall, and W.R. Whalley   | 561 |

|  |     |
|--|-----|
| <b>MRI As a Probe of the Deposition of Solid Fines in a Porous Medium</b><br>A.J. Sederman and L.F. Gladden  | 565 |
| ● POSTERS  |     |
| <b>NMR Relaxation Times in Treated Marble Samples</b><br>M. Alesiani, S. Capuani, B. Maraviglia, R. Giorgi, and P. Baglioni  | 569 |
| <b>Effective Diffusion of 5CB Liquid Crystal Confined to Controlled Porous Glass</b><br>T. Apih, R. Boehmer, and G. Hinze  | 569 |
| <b>NMR Relaxation Study of Hardening Acid-Base Dental Cements</b><br>T. Apih, R. Blinc, P. Jevnikar, N. Funduk, O. Pawlig, and R. Trettin  | 569 |
| <b>Proton Density Imaging of Water Migration in Low Water Content Soils</b><br>B. Balcom, H. Mulally, and B. MacMillan   | 570 |
| <b>Mesopore Development in Fired Clays</b><br>L. Betteridge and J.H. Strange   | 570 |
| <b>Influence of Adsorbed Crude Oil on NMR Relaxation of Water in Saturated Silica Sand</b><br>T. Bryar, M. Caputi, C. Daughney, and R. Knight  | 570 |
| <b>A Variable Temperature-<sup>2</sup>H-NMR Study of Benzene-D<sub>6</sub> Confined in Mesoporous Silica SBA-15</b><br>G. Buntkowsky, E. Gedat, J. Albrecht, I. Shenderovich, A. Schreiber, G. Findenegg, and H.H. Limbach                   | 571 |
| <b>Trabecular Bone Microstructure by Means of Multiples Spin Echo</b><br>S. Capuani, F.M. Alessandri, B. Maraviglia, and A. Bifone   | 571 |
| <b>Multiple Spin Echoes Technique as a Tool for the Evaluation of Stone Pore Size</b><br>S. Capuani, M. Alesiani, F.M. Alessandri, and B. Maraviglia   | 571 |
| <b>A Study of Formation Damage of Drilling Mud Invasion by NMR</b><br>Q. Chen, C. Ye, and Y. Yue   | 571 |
| <b>Investigation of Perforation Damage Characteristics of Berea Sandstone by MRI</b><br>Q. Chen, C. Ye, and Y. Yue   | 572 |
| <b>Studies of the Dissolution of Structured Surfactant Using Spatially Localised Double Quantum Filter and J-Cyclic-Cross Polarisation Edited NMR</b><br>E. Ciampi, U. Goerke, P.J. McDonald, J. Chambers, and B. Newling                    | 572 |
| <b>Structural Characterisation of Porous Media Using Experimental and Simulated Q-Space Imaging</b><br>G. Colgan, M.L. Johns, A.J. Sederman, and L.F. Gladden  | 572 |
| <b>Water Confinement in Paper</b><br>D. Capitani, A.L. Segre, C. Casieri, F. Sebastiani, and F. De Luca  | 573 |
| <b>Evolution of the EPR Spectrum and Spin Relaxation in Carbon Chars in Relation to the Oxygen Content in the Ambient Medium</b><br>V.A. Atsarkin, P.J. Ceroke, R.B. Clarkson, V.V. Demidov, F.S. Dzheparov, B.M. Odintsov, and G.A. Vasneva | 573 |



|  |     |
|--|-----|
| <b>A High Resolution NMR Logging Tool: Concept Validation</b><br>J. Tabary, M. Fleury, M. Locatelli, and J.-P. Martin  | 573 |
| <b>Pore Size Distribution in Mesoporous Materials Studied by <math>^1\text{H}</math> NMR Spectroscopy</b><br>D.W. Aksnes, K. Førland, and L. Gjerdåker   | 574 |
| <b>Overcoming Mechanical and Electronic Instabilities in Diffusion Measurements with Very High PFG-Intensities</b><br>P. Galvosas, F. Stallmach, G. Seiffert, and J. Kärger  | 575 |
| <b><math>^1\text{H}</math> MAS and Stray Field Gradient NMR on Guest Molecules and Surface Coatings in Mesoporous Silica MCM-41 and SBA-15</b><br>E. Gedat, A. Schreiber, G. Findenegg, H.-H. Limbach, and G. Buntkowsky | 575 |
| <b>NMR Measurements of the Stagnant Hydrocarbon Fraction in Two-Phase Flow Through Fontainebleau Sandstone</b><br>W.M. Holmes, R.G. Graham, and K.J. Packer  | 575 |
| <b>Water Dynamics on MCM-41 Surface</b><br>L.-P. Hwang, D.W. Hwang, A.K. Sinha, T.-Y. Yu, and C.-Y. Cheng  | 575 |
| <b>Simulation of Two-Phase Liquid Transport in Porous Media: Development and Evaluation Using MRI</b><br>M.L. Johns and L.F. Gladden   | 576 |
| <b>Long Range Order of Surface Water in Glass Pores</b><br>T. Kupka, J. Benson, A. Inglot, C. Choi, D.W. Nicoll, and M.M. Pinar  | 576 |
| <b>Diffusion of Fluids Inside Cross-Linked Elastomeric Materials</b><br>G. Maddinelli, C. Zanchi, G.P. Ravanetti, and A. Ferrando  | 576 |
| <b>Pore-Scale Simulation of Dispersion: Comparison with NMR Experiments</b><br>R.S. Maier, D.M. Kroll, R.S. Bernard, S.E. Howington, J.F. Peters, and H.T. Davis   | 577 |
| <b>MRI of Pore Size Distributions in Fault Sealing Oil Reservoir Rock Core Samples by Cryoporometric Filtering Techniques</b><br>M.J.D. Mallett, M.B. Clennell, J.H. Strange, and Q. Fisher                              | 577 |
| <b>Characterisation of Porous Materials by Means of Nuclear Magnetic Resonance</b><br>C.A. Martín, M.E. Ramia, D.J. Pusiol, A. Fiñana, M.F. Gayol, M.E. Alvarez, and M. Krenz  | 577 |
| <b>NMR on Contaminated Salt Water Ice</b><br>M.I. Menzel, S.-I. Han, M. Simons, S. Stapf, and B. Blümich   | 578 |
| <b>Cationic Silver Clusters in Sodalites</b><br>J. Michalik, H. Yamada, and J. Perlińska   | 578 |
| <b>Pulsed-Gradient Spin-Echo NMR Study of the <math>\text{H}_2\text{O}</math> Self-diffusivity in Clay Gels</b><br>Y. Nakashima  | 579 |
| <b>NMR Imaging Studies on Drilling Fluid Induced Rock Damage</b><br>S. Nicula and A. Lyne  | 579 |

|  |     |
|--|-----|
| <b>MRI Measurement of Velocity and Pore Structure in Porous Media Containing Stagnant Immiscible Liquid</b>  | 579 |
| I. Okamoto, S. Hirai, and K. Ogawa   |     |
| <b><math>^1\text{H}</math> NMRD Dispersions of Porous Media: A Model-Free Analysis</b>   | 580 |
| M. Fragai, C. Luchinat, K. Nerinovski, and G. Parigi   |     |
| <b>Pore Size Distribution From Hydrogen and Sodium NMR Using the Transverse Relaxation At 4.7 T</b>  | 580 |
| L. Rijniens, L. Pel, H.P. Huinink, and K. Kopinga  |     |
| <b>NMR Studies of Ceria Doped Alumina Powder Catalysts</b>   | 580 |
| A. Piras, A. Trovarelli, J. Plavec, and G. Dolcetti  |     |
| <b>A New Numerical Procedure for Solving the Nuclear Magnetic Resonance Relaxometry Problem</b>  | 581 |
| P. Barone, A. Ramponi, and G. Sebastiani   |     |
| <b>Optimum Excitation and Detection of NMR Signal in Static Magnetic Field Gradient</b>  | 581 |
| A. Reiderman, G. Itskovich, Z. Krugliak, and D.R. Beard  |     |
| <b>NMR Study of Tortuosity During Deactivation and Decoking of a Naphtha Reforming Catalyst</b>  | 581 |
| X.H. Ren, I. Bartussek, M. Bertmer, D.E. Demco, S. Stapf, B. Blümich, C. Kern, and A. Jess   |     |
| <b>Characterization by <math>^{29}\text{Si}</math> MAS NMR of a Porous Ceria-Silica Catalyst</b>   | 582 |
| E. Rocchini, A. Trovarelli, G. Dolcetti, and J. Plavec   |     |
| <b>Orientational Dependence of Surface Relaxation and the Origin of its Enhancement at Low Frequencies</b>   | 582 |
| S. Ryu   |     |
| <b>Dynamic Microimaging of Packed Capillaries</b>  | 582 |
| T.W.J. Scheenen, U. Tallarek, F.J. Vergeldt, P.A. De Jager, and H. Van As  |     |
| <b><math>^{15}\text{N}</math>-Pyridine—A Mobile NMR Sensor for Surface Acidity and Surface Defects of Mesoporous Silica</b>  | 583 |
| I. Shenderovich, Ph. Lorente, E. Gedat, G. Buntkowsky, A. Schreiber, N.S. Golubev, G. Findenegg, and H.H. Limbach  |     |
| <b>MRI Study of Molecular Mobility in Hydroxypropyl Methyl Cellulose (HPMC) Matrix Tablets With and Without Propylene Glycol—A Rapid Method for Obtaining <math>T_1</math> and <math>T_2</math> Images</b> | 583 |
| J.E.M. Snaar, I.J. Hardy, R. Bowtell, C.D. Melia, and W. Cook  |     |
| <b>Fluid Transport and Filtration in a Hemodialyzer Module by 2D PFG NMR</b>   | 583 |
| S.-I. Han, S. Stapf, and B. Blümich  |     |
| <b>Porous Materials Studied by XE Diffusion and MAS NMR</b>  | 584 |
| R. Simonutti, A. Comotti, S. Bracco, C. Mattarini, and P. Sozzani  |     |
| <b>PFG NMR Self-Diffusion Studies of Fluid Transport and Surface-to-Volume Ratios in Sands</b>   | 584 |
| F. Stallmach, C. Vogt, P. Galvosas, J. Kärger, and N. Klitzsch   |     |
| <b>Reducing Possible Susceptibility Artefacts in NMR and MRI Investigations of Porous Media Using a Low and Variable Magnetic Field</b>  | 584 |
| F. Stallmach, W. Gläßer, F. Jacobs, and J. Kärger  |     |
| <b>Structure-Size Estimation by Shape Analysis of NMR Self-Diffusion Propagators</b>   | 585 |
| S. Stapf and K.J. Packer   |     |

|   |     |
|---|-----|
| <b>Spatial Correlations in Dispersion Processes of Fluid Transport Through Porous Materials by 2-D PFG-NMR</b><br>S. Stapf, K.J. Packer, S. Békri, and P.M. Adler   | 585 |
| <b>Susceptibility Magnetic Field in a Porous Media: Measurement by Modulated Gradient Spin Echo</b><br>J. Stepišnik   | 586 |
| <b>New Approach to the Characterization of Porous Media by NMR Flow-Diffraction Studies and Time-Dependent Velocity Measurements</b><br>J.E. Tillich, S.R. Heil, and M. Holz  | 586 |
| <b>Magnetic Resonance Imaging of Pressurized Gas in Porous Media</b><br>S. Tsushima, I. Okamoto, T. Suekane, and S. Hirai   | 586 |
| <b>Self-Diffusion of Fluid in Partially Saturated Porous Medium</b><br>A.V. Uryadov and V.D. Skirda   | 587 |
| <b><sup>1</sup>H MRI Applied to Low Water and/or Low Mobility Systems: Solid-State Fermentor and Biomats</b><br>H. Van As, F.-J. Nagel, and A. Wieland  | 587 |
| <b>Monte-Carlo Simulation and NMR Measurement of Fluid Flow and Holdup Dispersion in Porous Media</b><br>F.J. Vergeldt, U. Tallarek, and H. Van As  | 587 |
| <b>Cu<sup>2+</sup> ESR Investigation in Acrylonitrile Sulfocation Exchange Membranes</b><br>Y.-S. Hong, C.-H. Cho, P. Dejjardin, M. Thomas, V.I. Volkov, B.V. Mchedlishvili, C.-Ho Lee                                | 588 |
| <b>The Charge Properties of PETF Track Etched Membrane Pore Surface on the Cu<sup>2+</sup> ESR Data</b><br>Y.-S. Hong, C.-H. Cho, N.V. Mitrofanova, A.N. Nechaev, V.I. Volkov, B.V. Mchedlishvili, C.-Ho Lee          | 588 |
| <b>The Self-Diffusion of Water and Membrane Structure in the New Type of Cation-Exchange Polyamide-Acid Membranes</b><br>S.A. Sokolova, O.V. Djakonova, V.V. Kotov, Y.-S. Hong, C.-H. Cho, V.I. Volkov, and C.-Ho Lee | 588 |
| <b>● AFTER DINNER TALKS</b>   |     |
| <b>Applications of Fast Field Cycling NMR Relaxometer to Porous Media</b><br>V. Satheesh and G. Ferrante  | 591 |
| <b>Some Aspects of the Fluid Flow in a Porous Media in the Microgravity Conditions for the Space Plant Production Systems</b><br>N.E. Daidzic, J.I.D. Alexander, and C.A. Camardo                                     | 593 |

---

VOLUME 19, NUMBER 5

2001

## CONTENTS

### ● ORIGINAL CONTRIBUTIONS

|   |     |
|---|-----|
| <b>Comparison of Contrast Enhanced MR-Angiography—MRI and Digital Subtraction Angiography in the Evaluation of Pancreas and/or Kidney Transplantation Patients: Initial Experience</b><br>William J. Boeve, Theo Kok, Adam M. Tegzess, Willem J. van Son, Rutger J. Ploeg, Willem J. Sluiter, and Richard L. Kamman | 595 |
|---|-----|

|  |     |
|--|-----|
| <b>Superior Diagnostic Strength of Combined Contrast Enhanced MR-Angiography and MR-Imaging Compared to Intra-Arterial DSA in Liver Transplantation Candidates</b><br>Willem J. Boeve, Theo Kok, Elisabeth B. Haagsma, Maarten J.H. Slooff, Willem J. Sluiter, and Richard L. Kamman | 609 |
| <b>Exophytic Benign Tumors of the Liver: Appearance on MRI</b><br>Till R. Bader, Larissa Braga, and Richard C. Semelka   | 623 |
| <b>Evaluation of a Contraceptive Device with MR Imaging</b><br>Catherine Maldjian, Marco A. Pelosi II, Marco A. Pelosi III, and Richard Adam   | 629 |
| <b>High Temporal Resolution Dynamic Contrast MRI in a High Risk Group for Placenta Accreta</b><br>Yumiko O. Tanaka, Satoshi Sohda, Sadahiko Shigemitsu, Mamoru Niitsu, and Yuji Itai   | 635 |
| <b>Cerebral Hemodynamic Response in Chinese (first) and English (second) Language Processing Revealed by Event-Related Functional MRI</b><br>Yonglin Pu, Ho-Ling Liu, John A. Spinks, Srikanth Mahankali, Jinhu Xiong, Ching-Mei Feng, Li Hai Tan, Peter T. Fox, and Jia-Hong Gao    | 643 |
| <b>The Quantification of <math>\Delta R_2^*</math> Under Brain Activation: Dependence on Relaxation Rate at Rest and Significance Threshold</b><br>Edzard Wiener, Marcus Settles, and Carl Ganter  | 649 |
| <b>Biexponential Apparent Diffusion Coefficient Parametrization in Adult vs Newborn Brain</b><br>Robert V. Mulkern, Sridhar Vajapeyam, Richard L. Robertson, Paul A. Caruso, Michael J. Rivkin, and Stephan E. Maier   | 659 |
| <b>Phase Contrast MRI With Improved Temporal Resolution by View Sharing: K-Space Related Velocity Mapping Properties</b><br>Michael Markl and Jürgen Hennig  | 669 |
| <b>Interactive Reduced FOV Imaging for Projection Reconstruction and Spiral Acquisition</b><br>Tobias Schaeffter, Volker Rasche, Peter Börnert, and Giel Mens  | 677 |
| <b>Quantitative Analysis of PC MRI Velocity Maps: Pulsatile Flow in Cylindrical Vessels</b><br>Malcolm B. Robertson, Uwe Köhler, Peter R. Hoskins, and Ian Marshall  | 685 |
| <b>Rapid Analysis of Non-Uniformly Sampled Pulsed Field Gradient Data for Velocity Estimation</b><br>Karthik Raghavan, Jaekeun C. Park, Galina E. Pavlovskaya, and Stephen J. Gibbs  | 697 |
| <b>Simulation and Analysis of Magnetic Resonance Elastography Wave Images Using Coupled Harmonic Oscillators and Gaussian Local Frequency Estimation</b><br>Jürgen Braun, Gerd Buntkowsky, Johannes Bernarding, Thomas Tolxdorff, and Ingolf Sack                                    | 703 |
| <b>Validation of Estimated 3D Temperature Maps During Hepatic Cryo Surgery</b><br>E. Samset, T. Mala, B. Edwin, I. Gladhaug, O. Søreide, and E. Fosse  | 715 |
| <b>Microvascular Permeability to Macromolecules in Human Melanoma Xenografts Assessed by Contrast-Enhanced MRI—Intertumor and Intratumor Heterogeneity</b><br>Ingvil Bjørnæs and Einar K. Rofstad  | 723 |
| <b>pH-Sensitive Paramagnetic Liposomes as MRI Contrast Agents: <i>In Vitro</i> Feasibility Studies</b><br>Knut-Egil Løkling, Sigrid L. Fossheim, Roald Skurtveit, Atle Bjørnerud, and Jo Klaveness   | 731 |

|   |     |
|---|-----|
| <b><i>In Vivo</i> Detection of <math>^{13}\text{C}</math>-Enriched Glucose Metabolites in Mouse Brain by T-SEDOR Imaging</b><br>C. Testa, C. Casieri, R. Canese, G. Carpinelli, F. Podo, and F. De Luca | 739 |
|---|-----|

|  |     |
|--|-----|
| <b>Proton Magnetic Relaxation in Bone Marrow Related to Age and Bone Mineral Density: Low-Resolution <i>In Vitro</i> Studies</b><br>L. Lendinara, C. Accorsi, C. Agostini, G. Angelini, F. Baruffaldi, M. Fini, M. Motta, and G. Giavaresi | 745 |
|--|-----|

|  |     |
|--|-----|
| <b>Radio-Frequency Probe for <math>^1\text{H}</math> Decoupled <math>^{31}\text{P}</math> MRS of the Head and Neck Region</b><br>D.W.J. Klomp, D.J. Collins, H.J. van den Boogert, A. Schwarz, M. Rijpkema, T. Prock, G.S. Payne, M.O. Leach, and A. Heerschap | 755 |
|--|-----|

#### ● **LETTERS TO THE EDITOR**

|   |     |
|---|-----|
| <b>Idiopathic Dilatation of the Pulmonary Artery: Report of Four Cases</b><br>Jean-Claude Hoeffel | 761 |
|---|-----|

|   |     |
|---|-----|
| <b>Congenitally Corrected Transposition of the Great Arteries (L-TGA) With Situs Inversus Totalis in Adulthood: Findings With Magnetic Resonance Imaging</b><br>Jean-Claude Hoeffel | 762 |
|---|-----|

---

|                     |      |
|---------------------|------|
| VOLUME 19, NUMBER 6 | 2001 |
|---------------------|------|

### CONTENTS

#### ● **ORIGINAL CONTRIBUTIONS**

|   |     |
|---|-----|
| <b>Lorentz Effect Imaging</b><br>Allen W. Song and Atsushi M. Takahashi | 763 |
|---|-----|

|   |     |
|---|-----|
| <b>Sampling and Evaluation of Specific Absorption Rates During Patient Examinations Performed on 1.5-Tesla MR Systems</b><br>Gunnar Brix, Martin Reinl, and Gerhard Brinker | 769 |
|---|-----|

|   |     |
|---|-----|
| <b>MR Imaging Findings of Infectious Cholangitis</b><br>Till R. Bader, Larissa Braga, Kimberly L. Beavers, and Richard C. Semelka | 781 |
|---|-----|

|   |     |
|---|-----|
| <b>Acute Renal Failure: Common Occurrence of Preservation of Corticomedullary Differentiation on MR Images</b><br>Jae-Joon Chung, Richard C. Semelka, and Diego R. Martin | 789 |
|---|-----|

|  |     |
|--|-----|
| <b>Comparison of Carotid Vessel Wall Area Measurements Using Three Different Contrast-Weighted Black Blood MR Imaging Techniques</b><br>Shaoxiong Zhang, Thomas S. Hatsukami, Nayak L. Polissar, Chao Han, and Chun Yuan | 795 |
|--|-----|

|   |     |
|---|-----|
| <b>Magnetization Transfer of Water <math>T_2</math> Relaxation Components in Human Brain: Implications for <math>T_2</math>-Based Segmentation of Spectroscopic Volumes</b><br>Gunther Helms and Andreas Piringer | 803 |
|---|-----|

|   |     |
|---|-----|
| <b>How do Concentration and Dosage of the Contrast Agent Affect the Signal Change in Perfusion-Weighted Magnetic Resonance Imaging? A Computer Simulation</b><br>Sabine Heiland, Wolfgang Reith, Michael Forsting, and Klaus Sartor | 813 |
|---|-----|

|  |     |
|--|-----|
| <b>Comparing BOLD fMRI Signal Changes in the Awake and Anesthetized Rat During Electrical Forepaw Stimulation</b>                                |     |
| R.R. Peeters, I. Tindemans, E. De Schutter, and A. Van der Linden  | 821 |
| <b>Spin-Echo Versus Gradient-Echo fMRI With Short Echo Times</b>   |     |
| P.W. Stroman, V. Krause, U.N. Frankenstein, K.L. Malisza, and B. Tomanek   | 827 |
| <b>Characterization of Contrast Changes in Functional MRI of the Human Spinal Cord at 1.5 T</b>  |     |
| P.W. Stroman, V. Krause, K.L. Malisza, U.N. Frankenstein, and B. Tomanek   | 833 |
| <b>The Quantitative <sup>19</sup>F-Imaging of Albumin at 1.5 T: A Potential In-Vivo Tool</b>   |     |
| ASK Dzik-Jurasz, J. Wolber, T. Prock, D.J. Collins, M.O. Leach, and I.J. Rowland   | 839 |
| <b>Magnetic Resonance Imaging of Alternating Electric Currents</b>   |     |
| Urša Mikac, Franci Demšar, Katarina Beravs, and Igor Serša   | 845 |
| <b>Magnetization Transfer and Double-Quantum Filtered Imaging as Probes for Motional Restricted Water in Tulip Bulbs</b>                         |     |
| P. Bendel, H. Zemah, R. Kamenetsky, F. Vergeldt, and H. van As   | 857 |
| <b>Architecture of Baked Breads Depicted by a Magnetic Resonance Imaging</b>   |     |
| Nobuaki Ishida, Hiroyuki Takano, Shigehiro Naito, Seiichiro Isobe, Kunihiro Uemura, Tomoyuki Haishi, Katsumi Kose, Mika Koizumi, and Hiromi Kano | 867 |
| <b>Development of a 1.0 T MR Microscope Using a Nd-Fe-B Permanent Magnet</b>   |     |
| Tomoyuki Haishi, Takaaki Uematsu, Yoshimasa Matsuda, and Katsumi Kose  | 875 |
| <b>The Lever-Coil: A Simple, Inexpensive Sensor for Respiratory and Cardiac Motion in MRI Experiments</b>  |     |
| Kenneth W. Fishbein, Patrick McConville, and Richard G.S. Spencer  | 881 |
| ● <b>TECHNICAL NOTES</b>   |     |
| <b>Determination of Vessel Cross Section for Flow Rate Quantification</b>  |     |
| Maja Stevanov, Joseph Baruthio, Olivier Musse, Daniel Gounot, and Jean Paul Armspach   | 891 |
| <b>A High-Resolution Phantom for MRI</b>   |     |
| Claudia Fellner, Walter Müller, Jens Georgi, Ulrike Taubenreuther, Franz A. Fellner, and Willi A. Kalender                                       | 899 |

VOLUME 19, NUMBER 7

2001

## CONTENTS

### ● ORIGINAL CONTRIBUTIONS

|   |     |
|---|-----|
| <b>Mapping of Brain Activation in Response to Pharmacological Agents Using fMRI in the Rat</b>  |     |
| Gavin C. Houston, Nikolas G. Papadakis, T. Adrian Carpenter, Laurance D. Hall, Bhashkar Mukherjee, Michael F. James, and Christopher L-H. Huang | 905 |



|   |      |
|---|------|
| <b>The Measurement of Fetal Liver <math>T_2^*</math> in Utero Before and After Maternal Oxygen Breathing: Progress Towards a Non-Invasive Measurement of Fetal Oxygenation and Placental Function</b><br>Scott I.K. Semple, Fintan Wallis, Paul Haggarty, David Abramovich, John A.S. Ross, Thomas W. Redpath, and Fiona J. Gilbert   | 921  |
| <b>Gravity-Dependent Perfusion of the Lung Demonstrated With the FAIRER Arterial Spin Tagging Method</b><br>Shella D. Keilholz, Jack Knight-Scott, John M. Christopher, Vu M. Mai, and Stuart S. Berr   | 929  |
| <b>On the Use of the FLAIR Technique to Improve the Correction of Eddy Current Induced Artefacts in MR Diffusion Tensor Imaging</b><br>Mark E. Bastin   | 937  |
| <b>Optimization of View Ordering for Motion Artifact Suppression</b><br>Thanh D. Nguyen, Guangliang Ding, Richard Watts, and Yi Wang  | 951  |
| <b>A Quantitative Comparison of Motion Detection Algorithms in fMRI</b><br>Babak A. Ardekani, Alvin H. Bachman, and Joseph A. Helpen  | 959  |
| <b>Magnetic Resonance Imaging of Simple and Infected Hydatid Cysts of the Brain</b><br>Omran El-Shamam, Talal Amer, and Mohamed Abo El-Atta   | 965  |
| <b>Low Field Thoracic MRI—A Fast and Radiation Free Routine Imaging Modality in Children</b><br>M. Wagner, B. Böwing, R. Kuth, M. Deimling, W. Rascher, and T. Rupprecht  | 975  |
| <b>Initial Changes of Non-Traumatic Osteonecrosis of Femoral Head in Fat Suppression Images: Bone Marrow Edema Was Not Found Before the Appearance of Band Patterns</b><br>Mikihiro Fujioka, Toshikazu Kubo, Fuminori Nakamura, Masahiko Shibata, Keiichi Ueshima, Hiroyuki Hamaguchi, Shigehiro Inoue, Nobuhiko Sugano, Takashi Sakai, Yukio Torii, Yukiharu Hasegawa, and Yasusuke Hirasawa | 985  |
| <b>Post Mortem Energy Metabolism and pH Development in Porcine <i>M. Longissimus Dorsi</i> as Affected by Two Different Cooling Regimes. A <math>^{31}\text{P}</math>-NMR Spectroscopic Study</b><br>Hanne Christine Bertram, Sune Dønstrup, Anders Hans Karlsson, Henrik Jørgen Andersen, and Hans Stødtkilde-Jørgensen  | 993  |
| <b>Multi-Channel Magnetic Resonance Spectroscopy Through Time Domain Multiplexing</b><br>James A. Bankson and Steven M. Wright  | 1001 |
| <b>A Device for Feline Head Positioning and Stabilization During Magnetic Resonance Imaging</b><br>Luke A. Henderson, Robert C. Frysinger, Pearl L. Yu, Richard Bandler, and Ronald M. Harper   | 1009 |
| ● TECHNICAL NOTES   |      |
| <b>An Exact Form for the Magnetic Field Density of States for a Dipole</b><br>Yu-Chung N. Cheng, E. Mark Haacke, and Ying-Jian Yu   | 1017 |
| <b>Kinetic Evaluation of an I.V. Bolus of MR Contrast Media</b><br>J.T. Heverhagen, R.C. Funck, U. Schwarz, P. Zoefel, V. Matschl, K.J. Klose, and H.-J. Wagner   | 1025 |
| <b>Elimination of k-Space Spikes in fMRI Data</b><br>Xiaodong Zhang, Pierre-Francois Van De Moortele, Josef Pfeuffer, and Xiaoping Hu   | 1031 |

**CONTENTS**

● **ORIGINAL CONTRIBUTIONS**

**MRI Based Diffusion and Perfusion Predictive Model to Estimate Stroke Evolution**

Stephen E. Rose, Jonathan B. Chalk, Mark Griffin, Andrew L. Janke, Fang Chen, Geoffrey J. McLachan, David Peel, Fernando O. Zelaya, Hugh S. Markus, Derek K. Jones, Andrew Simmons, Michael O'Sullivan, Jo M. Jarosz, Wendy Strugnell, David M. Doddrell, and James Semple

1043

**Influence of Baseline Hematocrit and Hemodilution on BOLD fMRI Activation**

Jonathan M. Levin, Blaise deB. Frederick, Marjorie H. Ross, Jonathan F. Fox, Heidi L. von Rosenberg, Marc J. Kaufman, Nicholas Lange, Jack H. Mendelson, Bruce M. Cohen, and Perry F. Renshaw

1055

**Effect of Vasodilator Hydralazine on Tumor Microvascular Random Flow and Blood Volume as Measured by Intravoxel Incoherent Motion (IVIM) Weighted MRI in Conjunction With Gd-DTPA-Albumin Enhanced MRI**

Zhiheng Wang, Min-Ying Su, A. Najafi, and Orhan Nalcioğlu

1063

**Short Echo Time Multislice Proton Magnetic Resonance Spectroscopic Imaging in Human Brain: Metabolite Distributions and Reliability**

Dirk Wiedermann, Norbert Schuff, Gerald B. Matson, Brain J. Soher, Antao T. Du, Andrew A. Maudsley, and Michael W. Weiner

1073

**Proton Magnetic Resonance Spectroscopy of Brain Lesions in Children With Neurofibromatosis Type 1**

Iain D. Wilkinson, Paul D. Griffiths, and Jerry K.H. Wales

1081

**High Spatial Resolution *In Vivo* 2D <sup>1</sup>H Magnetic Resonance Spectroscopic Imaging of Human Muscles With a Band-Selective Technique**

Jiani Hu, Quan Jiang, Yang Xia, and Chunsong Zuo

1091

**Detection of Biliary Complications After Orthotopic Liver Transplantation With MR Cholangiography**

Piero Boraschi, Giovanni Braccini, Roberto Gigoni, Giorgio Sartoni, Emmanuele Neri, Franco Filippini, Franco Mosca, and Carlo Bartolozzi

1097

**Granulomatous Hepatitis: MRI Findings**

N. Cem Balci, Atadan Tunaci, Ahmet Akinci, and Uğur Cevikbaş

1107

**Simultaneous Observations of Haemolymph Flow and Ventilation in Marine Spider Crabs at Different Temperatures: A Flow Weighted MRI Study**

Christian Bock, Markus Frederick, Rolf-M. Wittig, and Hans-O Pörtner

1113

● **TECHNICAL NOTE**

**On the Effects of Gating in Diffusion Imaging of the Brain Using Single Shot EPI**

Stefan Skare and Jesper L.R. Anderson

1125

## ● CASE REPORTS

### **Functional MR Imaging Assessment of a Non-Responsive Brain Injured Patient**

Chad H. Moritz, Howard A. Rowley, Victor M. Haughton, Karin R. Swartz, John Jones, and Behnam Badie

1129

### **Intracranial Ossifications and Microangiopathy at 8 Tesla MRI**

Vera Novak, Amir Abduljalil, Allahyar Kangarlu, Andrew Slivka, E. Bourekas, Peter Novak, Donald Chakeres, and Pierre-Marie Robitaille

1133

### **Magnetic Resonance Cholangiopancreatography (MRCP) of Intraductal Papillary-Mucinous Neoplasm (IPMN) of the Pancreas: Case Report**

Hope E. Peters and Kenneth M. Vitellas

1139

### **Spontaneous Retroperitoneal Hemorrhage Secondary to Subcapsular Renal Hematoma: MRI Findings**

N. Cem Balci, Mustafa Şirvanci, İlter Tüfek, Levent Onat, and Cihan Duran

1145

---

VOLUME 19, NUMBER 9

2001

## CONTENTS

## ● ORIGINAL CONTRIBUTIONS

### **Activation Detection in Event-Related fMRI Data Based on Spatio-Temporal Properties**

Shing-Chung Ngan, William F. Auffermann, Shantanu Sarkar, and Xiaoping Hu

1149

### **Simultaneous BOLD/Perfusion Measurement Using Dual-Echo FAIR and UNFAIR: Sequence Comparison at 1.5T and 3.0T**

M.N. Yongbi, F. Fera, V.S. Mattay, J.A. Frank, and J.H. Duyn

1159

### **Segmenting Brain White Matter, Gray Matter and Cerebro-Spinal Fluid Using Diffusion Tensor-MRI Derived Indices**

Mara Cercignani, Matilde Inglese, Malgorzata Siger-Zajdel, and Massimo Filippi

1167

### **Multiple Contrast Fast Spin-Echo Approach to Black-Blood Intracranial MRA: Use of Complementary and Supplementary Information**

Kecheng Liu and Paul Margosian

1173

### **Direct MR Arthrography of the Shoulder: 2D vs. 3D Gradient-Echo Imaging**

Ralf Wutke, Franz A. Fellner, Claudia Fellner, Richard Stangl, Martin Dobritz, and Werner A. Bautz

1183

### **Detection of Early Venous Filling in Gliomas on MRI: Preliminary Study by 2D Time-Resolved Dynamic Contrast-Enhanced MR Angiography With Echo-Sharing Technique**

Masahiko Sakamoto, Toshiaki Taoka, Satoru Iwasaki, Akio Fukusumi, Hiroyuki Nakagawa, Shinji Hirohashi, Katsutoshi Takayama, Takeshi Wada, Kimihiko Kichikawa, Hideo Uchida, Hajime Ohishi, Katsutoshi Murata, and Jun Okamoto

1193

### **Biliary Cystadenocarcinoma: Seven Year Follow-Up and the Role of MRI and MRCP**

David M. Williams, Kenneth M. Vitellas, and Douglas Sheafor

1203

- MR Imaging of Murine Arthritis Using Ultrasmall Superparamagnetic Iron Oxide Particles**  
Bernard J. Dardzinski, Vincent J. Schmithorst, Scott K. Holland, Gregory P. Boivin, Tomoyuki Imagawa, Shohei Watanabe, Jerome M. Lewis, and Raphael Hirsch 1209

- The Performance of Volume Selection Sequences for *In Vivo* NMR Spectroscopy: Implications for Quantitative MRS**  
Stephen F. Keevil and Marcus C. Newbold 1217

- Effects of K-Space Filtering and Image Interpolation on Image Fidelity in <sup>1</sup>H MRSI**  
Barbro Vikhoff-Baaz, Göran Starck, Maria Ljungberg, Kerstin Lagerstrand, Eva Forssell-Aronsson, and Sven Ekholm 1227

#### ● TECHNICAL NOTES

- In Vivo Magnetic Resonance Micro-Imaging of the Human Toe at 3 Tesla**  
József Constantin Széles, Bence Csapó, Markus Klarhöfer, Csilla Balássy, Raschid Hoda, Andreas Berg, Michael Roden, Peter Polterauer, Werner Waldhäusl, and Ewald Moser 1235

- Spectroscopy of Large Volumes: Spectroscopic Imaging of Total Body Fat**  
Jan Weis and Anders Hemmingsson 1239

- Intervertebral Disc Modeling Using a MRI Method: Migration of the Nucleus Zone Within Scoliotic Intervertebral Discs**  
D. Périé, J. Sales De Gauzy, D. Curnier, and M.C. Hobatho 1245

#### ● CASE REPORT

- Gamna-Gandy Bodies of the Spleen Detected With MR Imaging: A Case Report**  
Martin Dobritz, Anton Nömayr, Werner Bautz, and Franz A. Fellner 1249

---

VOLUME 19, NUMBER 10 2001

### CONTENTS

#### ● ORIGINAL CONTRIBUTIONS

- Sevoflurane and Nitrous Oxide Increase Regional Cerebral Blood Flow (rCBF) and Regional Cerebral Blood Volume (rCBV) in a Drug-Specific Manner in Human Volunteers**  
Christian Kolbitsch, Ingo H. Lorenz, Christoph Hörmann, Christian Kremser, Michael Schocke, Stephen Felber, Patrizia L. Moser, Martin Hinteregger, Karl P. Pfeiffer, Arnulf Benzer 1253

- MOSES: Multiple Oversampled Slabs EPI Sequence**  
D.N. Guilfoyle and J. Hrabec 1261

- Single Breath-Hold Multi-Slab and CINE Cardiac-Synchronized Gadolinium-Enhanced Three-Dimensional Angiography**  
James W. Goldfarb, Agnes E. Holland, and Robert R. Edelman 1267

- Acute Colonic Diverticulitis: Visualization in Magnetic Resonance Imaging**  
Johannes T. Heverhagen, Andreas Zielke, Natascha Ishaque, Thomas Bohrer, Michael El-Sheik and Klaus-Jochen Klose 1275

**Quantitative and Qualitative Assessment of Articular Cartilage in the Goat Knee With Magnetization Transfer Imaging**

Didier Laurent, James Wasvary, Jianyun Yin, Markus Rudin, Theodore C. Pellas, and Elizabeth O'Byrne 1279

**$^1\text{H}$  Double-Quantum Filtered MR Imaging of Joints Tissues: Bound Water Specific Imaging of Tendons, Ligaments and Cartilage**

Kazuya Ikoma, Hisatake Takamiya, Yoshiaki Kusaka, and Yoshiteru Seo 1287

**MRI Analysis of Right Ventricular Function in Normal and Spontaneously Hypertensive Rats**

Ahmad I.M. Al-Shafei, R.G. Wise, A.A. Grace, T.A. Carpenter, L.D. Hall, and Christopher L.-H. Huang 1297

**Existence of Contralateral Abnormalities Revealed by Texture Analysis in Unilateral Intractable Hippocampal Epilepsy**

O. Yu, Y. Mauss, I.J. Namer, and J. Chambron 1305

**Magnetic Resonance Imaging of Molecular Transport in Living Morning Glory Stems**

M. Gussoni, F. Greco, A. Vezzoli, T. Osuga, and L. Zetta 1311

**Effect of Slice Orientation on Reproducibility of fMRI Motor Activation at 3 Tesla**

Sharon Gustard, Jalal Fadili, Emma J. Williams, Laurance D. Hall, T. Adrian Carpenter, Matthew Brett, and Edward T. Bullmore 1323

**Quiet Imaging With Interleaved Spiral Read-Out**

Claudia Oesterle, Franciszek Hennel, and Jürgen Hennig 1333

**Effect of RF Coil Excitation on Field Inhomogeneity at Ultra High Fields: A Field Optimized TEM Resonator**

Tamer S. Ibrahim, Robert Lee, Brian A. Baertlein, Amir M. Abduljalil, Hui Zhu, and Pierre-Marie L. Robitaille 1339

● **TECHNICAL NOTE**

**Compensating for  $B_1$  Inhomogeneity Using Active Transmit Power Modulation**

Stuart Clare, Marcello Alecci, and Peter Jezzard 1349